in a shallow stream, while the last extension of the Rhine glacier withdrew from northern Switzerland (p. 56).

A full account is given by Prof. Hescheler of the animal remains, which include representatives of the lowland fauna of pre-Glacial times, of an Arctic or Alpine fauna, now known to have been strongly present, and of a fauna proper to the Magdalenian epoch, suggesting steppes and tundras. The cave-dwellers fed mostly on reindeer, hare, horse, and ptarmigan, and probably had no domesticated animals. Among the more interesting remains found may be mentioned those of the mammoth, the lion, the woolly rhinoceros and the musk-ox. G. A. J. C.

THE NEW IMPERIAL INSTITUTE.

WE imagine that few, if any, members of the old Corporation of the Imperial Institute, which was dissolved by Act of Parliament in 1903, believed that within a very few years the institute would be able to produce the record of useful work which has just been presented to Parliament.[1] The policy at first adopted, and persisted in long after it had been discredited, led to a failure, in so far as the complete fulfilment of the objects for which the institute was founded was concerned, and lent plausibility to the view that South Kensington was too "inaccessible" to become a centre of scientific and commercial information concerning the raw materials of the Empire. It has been amply proved, however, now that the original failure was not due to this cause. South Kensington is no longer inaccessible, and in any case the exact position in London of a central establishment, which has to be in close touch with distant parts of the Empire, whence its work chiefly comes, as well as with manufacturers throughout the United Kingdom, is a matter of secondary importance. Whatever may be urged against the South Kensington site, it has not stood in the way of the accomplishment of an increasing volume of work which, it is clear from the present report, must have taxed to the utmost the power and capabilities of the relatively small staff allotted to the institute.

The new era dates from 1903, when the Imperial Institute was transferred to the Government and placed under the control of the Board of Trade, with Prof. Dunstan as its new director. This Government department seems, however, to have been primarily interested in developing in the city a Commercial Intelligence Office, and appears to have done little to facilitate reconstruction at South Kensington. The institute made steady if slow progress during this period, as shown by the report on its work presented to Parliament in 1906, and received increasing support from the colonies, with the result that in 1907 its management was delegated, under the Act of 1903, to the Colonial Office, representation on the board of management being given to the India Office and the Board of Trade.

It may be claimed that the present measure of success is the result of steady and persistent work on scientific lines, and is indeed the outcome of the foundation in 1896 of the scientific and technical department, with the assistance of the Royal Commissioners of the Exhibition of 1851, who, however, ceased to contribute to the support of this department when the institute was transferred to the Government.

The present report deals with each of the several divisions of the work carried on, but we need only refer to that of more immediate scientific interest. This concerns the operation of the institute in conducting investigations and inquiries relating to the commercial utilisation of the raw materials of the Empire.

This work has benefited the British manufacturer, as well as the colonial producer, as is shown by many instances quoted in the report. It is obviously of first importance that this scientific work should be directed to practical ends and made to tell commercially, so that, as a rule, the results are of technical and commercial rather than of purely scientific interest. Nevertheless, the members of the scientific staff have made a very creditable contribution to more purely scientific knowledge, no fewer than thirty communications to the Royal and other scientific societies being noticed in the report. These relate chiefly to the results of researches on the constituents of new vegetable and mineral products. The material placed at the disposal of the institute is so valuable and important, from this point of view, that, in the interests of science, it would be a wise step for the Colonial Office to enable the scientific members of the staff to devote more time to such investigations as these, most of which can only be undertaken successfully by such men with special training and experience, who are at present deterred from undertaking it by the pressure of routine work.

We observe that satisfactory working arrangements have been concluded with agricultural and other technical departments in the colonies, by which only such investigations are conducted at the institute as require special knowledge and experience, or are of a technical character needing reference to manufacturers at home. The colonies are thus left free to devote attention to such work as can best be accomplished on the spot, whilst relying on the Imperial Institute for the conduct of investigations which can most usefully be carried out by a central department at home.

Brief mention may also be made of two other branches of activity.

The "Bulletin of the Imperial Institute" serves as a medium for the publication of the more important official reports of investigations, and also for the dissemination of information respecting developments in tropical agriculture and the utilisation of raw materials. This quarterly publication is stated in the report to have a large and increasing circulation in this country and the colonies.

The public exhibition galleries contain exhibits representative of the natural resources of practically all parts of the Empire. Their reorganisation has been in progress since 1903, and new products, maps, statistical diagrams, &c., are continually being added, with the view of rendering the "Court" allotted to each British possession as representative as possible of its present economic development. The report mentions that special facilities are now afforded to schools, with the object of rendering the exhibition galleries useful as a means of teaching the geography of the colonies and India, and that these facilities are being taken advantage of to an increasing extent.

The Imperial Institute in its new *régime* still suffers to some extent from the prejudice created by its false start. Now that it has justified its existence and shown that it can render services of great importance to the Empire, it may be expected that something further will be done to strengthen its general and financial position. The present report shows that its operations are hampered for want of space. The arrangements made with the Government by the former corporation included the occupation of a portion of the building by the administrative offices of the University of London. In view of the increasing need, both of the university and the institute, for adequate accommoda-

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[1] Report on the Work of the Imperial Institute. 1906 and 1907. Colonial Reports—Annual Series, No. 584. By Prof. W. R. Dunstan, F.R.S.

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tion in which to carry on their work, which, though entirely different in character in the two cases, is of great importance to the nation, the situation will before long require reconsideration, as new conditions have arisen since the arrangement was entered into in 1903.

BALTIMORE MEETING OF THE AMERICAN ASSOCIATION.

THE sixtieth annual meeting of the American Association for the Advancement of Science and of the several affiliated societies was held at Baltimore, Md., on December 28, 1908, to January 2, 1909. In practically all respects the meeting was the most successful in the history of the association. It was the largest meeting ever held, and the total attendance is estimated at about 1800. In addition to the several sections of the association, important meetings were held by the following bodies:—

The American Society of Naturalists, the American Society of Biological Chemists, the American Anthropological Association, the American Folk-lore Society, the American Philosophical Association, the American Physical Society, American Psychological Association, American Physiological Society, American Society of Vertebrate Palæontologists, the American Chemical Society, American Society of Zoologists, American Nature-study Society, American Mathematical Society, the American Federation of Teachers of the Mathematical and the Natural Sciences, American Institute of Electrical Engineers, American Alpine Club, Association of American Geographers, Association of Economic Entomologists, the Botanical Society of America, the Entomological Society of America, Geological Society of America, Society of American Bacteriologists, Association of American Anatomists, Southern Society for Philosophy and Psychology, the Sullivant Moss Society, and the Wild Flower Preservation Society.

The address of the retiring president of the association, Prof. E. L. Nichols, of Cornell, was entitled "Science and the Practical Problems of the Future," and was printed in an abridged form in last week's NATURE. It was an address of very broad bearing, written by an eminent physicist and at the same time by one engaged in university work. It contained a strong plea for research work in pure science at the universities. The addresses of the vice-presidents, that is, presidents of sections, were all upon important topics. Vice-president Wilson, before the section of zoology, spoke on recent researches on the determination and heredity of sex; Vice-president Talbot, before the section of chemistry, spoke of science teaching as a career; Vice-president Crowell, before the section of social and economic science, spoke on the influence of science on investments; Vice-president Lovett, in mathematics and astronomy, had for a title "The Problem of Several Bodies: Recent Progress in its Solution"; Vice-president Miller, before the section of physics, spoke on the influence of the material of wind instruments on the tone quality; Vice-president Bessey addressed the botanists on the subject of the phyletic idea in taxonomy; Vice-president Hektoen, before the section of physiology and experimental medicine, spoke of opsonins and other anti-bodies; Vice-president Boas addressed the section of anthropology and psychology upon the important topic of race problems in America; and Vice-president Landreth, before the section of mechanical science and engineering, spoke of governmental control of public waters.

The addresses all through the meeting assumed in general an aspect of great interest. Dr. Bogert's address as retiring president of the American Chemical Society was on the subject of the function of chemistry in the conservation of natural resources; Prof. Muensterberg, as president of the American Philosophical Association, spoke on the problem of beauty; the address of the president of the American Society of Naturalists, Prof. Penhallow, of McGill University, was entitled "The Functions of the American Society of Naturalists"; Vice-president Brown, before the section of education, dealt with world standards of education.

The public addresses were of extreme interest. Prof. E. B. Poulton, F.R.S., of the University of Oxford, addressed a large audience on the subject of mimicry in the butterflies of North America; Dr. Albrecht Penck, of the University of Berlin, spoke on the same night before an equally large audience on man, climate, and soil; Mr. W. A. Bryan, of Honolulu, gave a public lecture on a visit to Mount Kilauea, illustrated by moving pictures—this address was appropriate in view of the proposed visit of the association to Hawaii in 1910. An important feature of the meeting was an address by Major Geo. A. Squier, of the United States Army, before the section on mechanical science and engineering, on the subject of recent progress in aëronautics, which was followed by the decision of the section to devote special attention to the field of aëronautics in its future work.

Several symposia of great interest were held during the meeting. That given under the auspices of the section on social and economic science, on the subject of public health, was listened to by a large audience, and included papers by Dr. Wiley, on the nation's pure food problem; by Dr. Howard, on the economic loss to the people of the United States through insects that carry disease; by Mr. Horace Fletcher, on vital economics; by Prof. Irving Fisher, on the movement for health reform; and by Surgeon-General Wyman, on public health administration. The same section held symposia on tariff reform and on stock exchange regulation. An important symposium was held under the section of physiology and experimental medicine on the regulation of physical instruction in schools and colleges from the standpoint of hygiene. The section on geology held a symposium on the subject of correlation, in which the most eminent geologists of the United States took part, and the section on physics held a session at which papers of general interest to scientific men of other specialities were presented.

Possibly the event of greatest general interest was the Darwin memorial day programme, held on Friday, January 1. Prof. E. B. Poulton, F.R.S., was present from England at the invitation of the association to take part in the exercises of the day. Introductory remarks were made by the president of the association, Prof. T. C. Chamberlin, of the University of Chicago, and the following addresses were given:—

The theory of natural selection from the point of view of botany, by Dr. John M. Coulter, of the University of Chicago; fifty years of Darwinism: past and future experimental work bearing on natural selection, by Prof. E. B. Poulton, of Oxford University; the cell in relation to heredity and evolution, by Dr. E. B. Wilson, of Columbia University; the direct effect on environment, by Dr. D. T. MacDougal, of the Carnegie Institution of Washington; the behaviour of unit characters in heredity, by Dr. S. W. E. Castle, of Harvard University; mutation, by Dr. Chas. B. Davenport, of the Carnegie Institution of Washington; adaptation, by Dr. Carl H. Eigenmann, of the Indiana University; recent palæontological evidence of evolution, by Prof. H. F. Osborn, of Columbia University.

These addresses will be published in a memorial volume, together with the following addresses, which were on the programme, but were not read owing to the necessary absence of the authors:—

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